

## CLAIMS

1. A concrete recycling machine, comprising:  
a slurry vessel that receives slurry provided from concrete being returned,  
5 said slurry vessel having an agitation device;  
a motor that drives the agitation device; and  
a control system that controls at least one of duration and frequency with  
which said motor drives the agitation device.

10 2. A concrete recycling machine as recited in claim 1,  
wherein said control system monitors a load on said motor during said driving  
of the agitation device, and  
wherein said control system controls at least one of duration and frequency  
with which said motor drives the agitation device based on the load.

15 3. A concrete recycling machine as recited in claim 2, wherein said control  
system controls the duration that said motor drives the agitation device based on the  
load, and wherein the greater the load, the longer the duration that said motor drives  
the agitation device.

20 4. A concrete recycling machine as recited in claim 2, wherein said control  
system controls the frequency with which said motor drives the agitation device  
based on the load, and wherein the greater the load, the greater the frequency with  
which said motor drives the agitation device.

25 5. A concrete recycling machine as recited in claim 2, wherein the agitation  
device is a rotatable agitation device.

30 6. A concrete recycling machine as recited in claim 5, wherein the rotatable  
agitation device comprises a shaft with a plurality of paddles.

7. A concrete recycling machine as recited in claim 1, wherein at least one of  
duration and frequency with which said motor drives the agitation device is selected  
from predetermined values based on the load.

8. A concrete recycling machine as recited in claim 7, wherein the predetermined values are stored in a data look-up table.

9. A method for recycling concrete, said method comprising:

(a) removing at least a portion of aggregates from the concrete, thereby leaving at least slurry;

(b) storing the slurry in a slurry vessel, the slurry vessel having an agitation element driven by a motor; and

(c) agitating the slurry within the slurry vessel by driving the agitation element with the motor such that the energy used in performing said agitating (c) is varied based on the load on the motor.

10. A method as recited in claim 9, wherein the load on the motor is categorized into a plurality of load categories, and

wherein at least one of a duration and a frequency of said agitating (c) is determined based on the load category for the load.

11. A method as recited in claim 9, wherein the load on the motor is determined during an initial agitation.

12. A method as recited in claim 9, wherein the load on the motor is determined periodically.

13. A method as recited in claim 9, wherein the load on the motor is categorized into low, medium and high loads, and

wherein a duration and frequency of said agitating (c) are controlled based on the load in accordance with the following table:

<u>LOAD</u>	<u>DURATION / FREQUENCY</u>
<b>Low</b>	30 seconds / 1 hour
<b>Medium</b>	45 seconds / .75 hour
<b>High</b>	60 seconds / .5 hour

14. A method for controlling a motor for agitating a cement slurry, said method comprising:

activating the motor to agitate the cement slurry;

monitoring a load on the motor during said activating;

determining a suitable agitation duration based on the load; and

deactivating the motor so as to cease agitating the cement slurry after the suitable agitation duration has passed since said activating was initiated.

15. A method as recited in claim 14, wherein the agitation duration decreases as the load decreases.

16. A method as recited in claim 14, whereby said method performs agitation of the cement slurry in an energy efficient manner.

17. A method as recited in claim 14, wherein said method further comprises:

determining whether the load exceeds an overload threshold; and

signaling an overload status when said determining determines that the load exceeds the overload threshold.

18. A method as recited in claim 17, wherein said signaling comprises illuminating an overload status light at a control or maintenance center.

19. A method as recited in claim 17, wherein said signaling comprises automatically notifying a control or maintenance center.

20. A method for controlling a motor for agitating a cement slurry, said method comprising:

monitoring density of the slurry;

determining a suitable agitation duration based on the density; and

periodically activating the motor for the suitable agitation duration.